

Quality of Teaching Mathematics and Learning Achievement Gains: Evidence from Primary Schools in Kenya

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Abstract

This paper examines the contribution of quality mathematics teaching to student achievement gains. Quality of mathematics teaching is assessed through teacher demonstration of the five strands of mathematical proficiency, the level of cognitive task demands, and teacher mathematical knowledge. Data is based on 1907 grade 6 students who sat for the same test twice over an interval of about 10 months. The students were drawn from a random selection of 72 low- and high-performing primary schools. Multi-level regression shows the effects of quality mathematics teaching at both individual and school levels, while controlling for other variables that influence achievement. Results show that students in low-performing schools gained more by 6 % when mathematics instruction involved high-level cognitive task demands, with two thirds of all the lessons observed demonstrating the strands of mathematics proficiency during instruction. The implication to education is that quality of mathematics instruction is more critical in improving learning gains among low-performing students.

Keywords: Mathematics, Proficiency, Knowledge, Cognitive, Demand, School

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